

on page 2 of this paper.

Remarks/Arguments begin on page 4 of this paper.

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in this application.

**Listing of the Claims:**

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Claims 1-2 (cancelled)

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Claim 3 (currently amended): The ion source (50) of claim 2 4, wherein said control mechanism comprises a heating element (80) for heating the heating medium (70), a pump (55) for circulating said heating medium, at least one thermocouple (92) for providing temperature feedback from said heating medium (70), and a controller (56) responsive to said temperature feedback to output a first control signal (94) to said heating element.

Claim 4 (currently amended): The ion source (50) of claim 2 An ion source (50) for an ion implanter, comprising:

- (i) a sublimator (52) having a cavity (66) for receiving a source material (68) to sublimate and for sublimating the source material;
- (ii) a gas injector (104) for injecting gas into said cavity (66);
- (iii) an ionization chamber (58) for ionizing the sublimated source material, said ionization chamber located remotely from said sublimator;
- (iv) a feed tube (62) for connecting said sublimator (52) to said ionization chamber (58); and
- (v) a heating medium (70) for heating at least a portion of said sublimator

(52) and said feed tub (62), and a control mechanism for controlling the temperature of said heating medium (70),

wherein said gas is selected from the group consisting of helium and hydrogen.

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Claim 5 (canceled)

Claim 6 (currently amended): The ion source (50) of claim 2 4, wherein said source material is a molecular solid having a vapor pressure of between  $10^{-2}$  Torr and  $10^3$  Torr and a sublimation temperature of between  $20^{\circ}\text{C}$  and  $150^{\circ}\text{C}$ .

Claim 7 (original): The ion source (50) of claim 6, wherein said source material is decaborane.

Claim 8 (original): The ion source (50) of claim 7, wherein said gas improves the heat transferability between walls (64) of the sublimator (52) and the source material (68).

Claims 9-10 (canceled)

Claim 11 (currently amended): The vaporizer of claim 10 12, wherein said control mechanism comprises a heating element (80) for heating the heating medium (70); a pump (55) for circulating said heating medium, at least one thermocouple (92) for providing temperature feedback from said heating medium (70), and a controller (56) responsive to said temperature feedback to output a first control signal (94) to said heating element.

Claim 12 (currently amended): The vaporizer of claim 10 A vaporizer for an ion source (50), comprising:

- (i) a crucible (52) having a cavity (66) for receiving a source material (68) to be vaporized and for vaporizing the source material;

- A'cept*
- (ii) a gas injector (104) for injecting gas into said cavity (66);
  - (iii) a feed tube (62) for connecting said vaporizer (52) to a remotely located ionization chamber in which vaporized source material may be ionized;
  - (iv) a heating medium (70) for heating at least a portion of said vaporizer (52) and said feed tube (62); and
  - (v) the vaporizer claim 9, further comprising a control mechanism for controlling the temperature of said heating medium (70), wherein said gas is selected from the group consisting of helium and hydrogen.

Claim 13 (canceled)

Claim 14 (currently amended): The vaporizer of claim 10 12, wherein said source material is a molecular solid having a vapor pressure of between  $10^{-2}$  Torr and  $10^3$  Torr and a sublimation temperature of between  $20^{\circ}\text{C}$  and  $150^{\circ}\text{C}$ .

Claim 15 (original): The vaporizer of claim 14, wherein said source material is decaborane.

Claim 16 (original): The vaporizer of claim 15, wherein said gas improves the heat transferability between walls (64) of the crucible (52) and the source material (68)

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**REMARKS/ARGUMENTS**

The Office Action Summary that is the subject of this response indicates that Claims 1-16 are pending in the present application with Claims 1-3, 6, 7, 9-11